

**WHAT IS CLAIMED IS:**

1. A method for compressing and restructuring video signals to promote the usefulness of a video channel, comprising the steps of :

- 5                   (a) processing a plurality of digital video data streams to form digital video data streams each having a desired bandwidth; and
- (b) integrating the digital video data streams having said desired bandwidth into an integrated digital video data stream having a bandwidth fitting said video channel.

10                  2. The method according to claim 1 wherein step (a) comprises the steps of :

                     compressing each of said plurality of digital video data streams into a digital video data stream having a certain bandwidth;

                     inputting the digital video data streams having said certain bandwidth to multiplexers for forming digital video data streams having said desired bandwidth.

15                  3. The method according to claim 1 wherein in step (b) a multiplexer is used to integrate the digital video data streams having said desired bandwidth.

4. The method according to claim 1 wherein said digital video data stream is the video data having been compressed by MPEG2.

20                  5. The method according to claim 1 wherein the bandwidth of said video channel is the bandwidth of an analog TV video channel of 6MHz.

6. A device for compressing and restructuring video signals to promote the usefulness of a video channel, comprising:

25                 a plurality of video compressors each compressing a digital video data stream applied thereto into a digital video data stream having a certain bandwidth;

                     a multiplexer receiving the digital video data streams having said certain bandwidth to provide a digital video data stream having a desired bandwidth.

7. The method according to claim 6 wherein said video compressor comprises a trancoder for compressing the bit rate of the digital video data stream applied thereto.

30                 8. A video compressor for compressing ~~digital~~ digital video data stream, comprising:

a trancoder for compressing the bit rate of said digital video data stream;  
an input buffer and an output buffer respectively connected to the input pin  
and output pin of said trancoder, for temporarily saving the video code of said  
digital video data stream.

- 5 9. The video compressor according to claim 8 wherein said trancoder  
comprises:
- 10      a delay buffer receiving from the output pin of said trancoder said digital  
video data stream which is then adjusted therein, and generating an overflow  
signal according to the overflow status thereof;
- 15      a variable length decoder for decoding the video codes of said digital video  
data stream to obtain numeral codes;
- 20      a dequantizer for restoring quantized data;
- 25      a quantization scale predictor nonlinearly computing, according to said  
overflow signal and the amount of said digital video data stream to be outputted  
immediately, to provide an quantization scale;
- 30      a quantizer proceeding quantization to provide an output according to the  
quantization scale provided by said quantization scale predictor and the  
quantized data restored by said dequantizer;
- 35      a variable length encoder for encoding the output provided by said  
quantizer.
- 40 10. The video compressor according to claim 9 wherein said quantization scale  
predictor is made of a neural network, and inputs said overflow signal, the  
number of bits of current Macroblock as well as the Macroblocks following  
thereafter.
- 45 11. The video compressor according to claim 9 wherein said quantization scale  
predictor provides a signal to indicate a normalized value of said quantization  
scale, said normalized value is multiplied by a constant for obtaining a  
quantization scale to be provided to said trancoder.
- 50 12. The video compressor according to claim 10 wherein said quantization  
scale predictor provides a signal to indicate a normalized value of said  
quantization scale, said normalized value is multiplied by a constant for

obtaining a quantization scale to be provided to said transcoder.